in the southwestern part of the county. Along the River Road in Danville, where this species meets *T. fallax* it hybridizes with it.

Triodopsis denotata (Fér.). Found only in the Smith Mountain Gorge.

Triodopsis albolabris (Say). Common over the county. Piedmont stock averages 25 to 26 mm. in diameter. Blue Ridge stock in the valleys of the Dan and Roanoke Rivers averages somewhat larger.

Allogona profunda (Say). Found only along the Roanoke River in the Smith Mountain Gorge.

MAXWELLIA, GENUS NOVUM OF MURICIDAE

By JOSHUA L. BAILY, JR.

After a diligent search through all the literature available to him, this writer has been driven rather reluctantly to the conclusion that no generic name exists which can reasonably be applied to that group of species of which *Murex gemma* Sowerby [1] is the best known example.

The name *Muricidea* was proposed by Swainson [2] for this group, and it has been widely used and is universally understood, but unfortunately it was disqualified by Swainson (1840, p. 65) [2] himself, who in a moment of mental aberration designated *Murex magellanicus* Gmelin [3] as type. According to Tryon,[4] this name is a synonym of *Murex geversianus* Pallas [5] which is the type of *Trophon* Montfort,[6] so that the effect of Swainson's designation is to make *Muricidea* a synonym of *Trophon*.

Dall [7] has resurrected the name *Triremis* (Bayle) Fischer [8] for this group, but this course is open to objection on several

1 Thes. Conch., *Murex*, p. 32, pl. 22, f. 214, 1879.

2 Treat. Malac., p. 296, 1840.

3 Syst. Nat., 13th edit., p. 3548, 1790.

4 Man. Conch., ser. 1, v. 2, p. 242, 1880.

5 Spicil. Zoöl., pl. 3, f. 1, 1769.

6 Conch. Syst., v. 2, p. 482, 1810.

7 Bull. U. S. N. M. 112, p. 106, 1921.

8 Man. de Conchyl., v. 1, p. 641, 1884.

grounds. First the type of *Triremis* is (by monotypy) *Murex gambiensis* Reeve.[9] The figure by Reeve is of a shell with ornate varices, fringed with hooks and frills, which differs widely from the smooth shell of *Murex gemma.* Second, *Murex gambiensis* is also the type of the genus *Purpurellus* Jousseaume[10] which has four years priority over *Triremis,* so that the latter falls as an identical synonym of *Purpurellus.* And third, Dall included the species *Murex festivus* Hinds[11] in *Triremis,* which appears to be a somewhat arbitrary procedure, for even if the soft parts of *Murex gemma* and *Murex festivus* could be shown to be identical there is sufficient difference not only in the shells but also in the opercula to justify the segregation of these species in separate genera. Neither one, however, could very logically be considered congeneric with the type of *Purpurellus.*

Grant and Gale[12] have followed Dall in uniting *Murex gemma* and *Murex festivus* in a single genus, but they use the name *Jaton* Pusch[13] into the synonymy of which they throw *Jatova* Jousseaume (1880, p. 335)[10] on the ground that the respective generic types are identical. These are *Murex decussatus* Gmelin (1790, p. 3527)[3] and Le Jatou, Adanson.[14] Pusch's alteration of the spelling of Adanson's name appears to be due to the inability of his proof reader to decipher his chirography. Jousseaume's rendition constitutes a much more satisfactory Latinization of Adanson's vernacular, but we must accord priority to Pusch and accept his orthography as men take their wives, for better or for worse.

Adanson's figure of Le Jatou was reproduced by Reeve (1845, pl. 27, f. 121)[9] under the name of *Murex lingua-vervecina* Chemnitz[15] incidentally referring to Adanson's name as Le Jaton, Reeve's chirography having been apparently on a par with that of Pusch. This figure is almost the "spit 'n' image" of *Murex festivus,* which species may therefore reasonably be assigned to *Jaton,* but *Murex gemma* can not.

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9 Conch. Icon., v. 3, *Murex,* pl. 16, f. 65, 1845.

10 Le Naturaliste, p. 375, Dec. 15th, 1880.

11 Proc. Z. S. L., pl. 11, p. 127, March, 1844.

12 Mem. S. D. Soc. N. H., v. 1, p. 707, 1931.

13 Polens. Paleont., pt. 2, p. 135, 1837.

14 Hist. Nat. de Senegal, p. 129, pl. 9, f. 21, 1757.

15 Syst. Conch. Cab., v. 10, pl. 161, f. 1540–1, 1795.

Tryon (1880, p. 116)[4] discarded the name *Muricidea* altogether, but on taxonomic rather than on nomenclatorial grounds. He transferred most of its species, *Murex gemma* among them, to *Ocenebra* Leach[16] where, as must be confessed, its smooth shell seems more at home than among the spinose forms of the genus *Murex.*

Thiele[17] retained the name *Muricidea,* in the synonymy of which he put the name *Muricopsis* Bucquoy, Dautzenberg, and Dollfus.[18] The present writer was formerly inclined to think that *Muricopsis* might replace *Muricidea* but the original description and figure of the generic type seem to exclude *Murex gemma.*

There are but few families which have been so cluttered up with superfluous nomenclature as the Muricidae, and he who has the temerity to add to this verbiage is under the moral responsibility carefully to consider the paraphrase of the question so frequently put during the war days, and to ask himself, Is this *nomen novum* really necessary? A single individual can hardly examine personally every generic type ever designated in this family, but that fact only emphasizes the importance of examining as many of them as possible. The present writer has made an honest effort to examine the original descriptions and figures of every generic type in this family set out in such systematic works as those of Cossmann[19] and Woodring[20] as well as those of the twenty-six new names published by Jousseaume (1880, pp. 335-6)[10] together with authentically named specimens where available in the Museum of the San Diego Society of Natural History, and he has concluded that the proposal of a new name for *Murex gemma* instead of adding to the confusion would clarify the situation, and he therefore offers the following:

MAXWELLIA, **genus novum.**

Shell solidly built, with an elongated canal that is nearly closed, but at no point of which is the closure quite complete.

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16 Ann. Mag. N. H., v. 20, p. 269, 1847.

17 Handb. der Syst. Weichth., v. 1, pt. 1, pp. 293–4, 1929.

18 Moll. Mar. du Roussillon, v. 1, p. 19, 1882.

19 Essai Paleo. Comp., pp. 1–66, 1903.

20 Carn. Inst. Wash. Publ. no. 385, pp. 287–96, 1928.

Body whorl with approximately six varices, whose breadth exceeds that of the spaces alternating with them, as well as the elevation of the varices themselves. Varices extending across the suture to the periphery of the adjoining volution, resembling architectural buttresses. Suture rather deep, and divided by the varices into a series of pits which are the most distinctive feature of the shell. No sutural tubes as in *Typhis* and no expanded digitations of the outer lip as in *Homalocantha*. Operculum with marginal nucleus.

This genus is named for Mr. Maxwell Smith, with whom the present writer hunted for the shells of its generic type, *Maxwellia gemma* (Sowerby),[1] in their boyhood days, in fulfillment of mutual promises exchanged at that time. The generic type has been figured by Maxwell Smith.[21]

Besides the type there are three other species that may be assigned to the new genus. *Muricidea santarosana* Dall[22] is certainly a *Maxwellia*. *Murex fimbriatus* Adams[23] is quite inadequately described, but it has been figured by Sowerby (1879, f. 215)[1] and by Tryon (1880, pl. 26, f. 240)[4] and there can be no doubt as to its generic affiliation.

The case of *Muricidea erinaceoides* (?), var. *indentata* Carpenter[24] is peculiar. The interrogation point implies uncertainty, not as to the validity of Carpenter's variety, but as to the species to which Valenciennes[25] gave the name *erinaceoides*. This name suggests similarity to *Murex erinaceus* Linnaeus[26] which is the type[27] of *Ocenebra* Leach, while *Murex erinaceoides* has been referred by Dall (loc. cit.) to *Alipurpura* (Bayle) Fischer (1884, p. 641),[8] which he considered a subgenus of *Murex*. To complicate matters further, Tryon (1880, p. 232)[4] identified *Muricidea erinaceoides* with *Murex lugubris* Broderip,[28] which may or may not be the same as the species now commonly known as *Acanthina lugubris* Sowerby (1822).

[21] Catalog of Muricidae, pt. 1, no. 163, pl. 6, f. 12, 1938.

[22] Nautilus, v. 19, p. 14, 1905; Bull. U. S. N. M. 112, pl. 13, f. 3, 4, 1921.

[23] Proc. Z. S. L., p. 71, 1853.

[24] Mazatlán Catalog, p. 527, 1857.

[25] Rec. Obs. Humb. et Bonpl., Moll., v. 2, p. 302, 1833.

[26] Syst. Nat., 12th edit., p. 1216, 1767.

[27] Proc. Z. S. L., p. 133, 1847.

[28] Proc. Z. S. L., p. 175, 1832.

Specimens of *Murex erinaceoides* in the collection of the San Diego Society of Natural History, presumably identified accurately, indicate that this species cannot be referred to *Maxwellia,* and that its assignment to *Muricidea* was the result of Carpenter's inability to understand Valenciennes' description. Carpenter's own statement that his variety has varices "which continue over the suture, leaving deep pits" make it clear that whatever *Murex erinaceoides* may be, *Muricidea indentata* is a *Maxwellia.*

Maxwellia santarosana, Maxwellia fimbriata, and *Maxwellia indentata* possibly may prove to be a single species; in which case, Carpenter's name will prevail, since that of Adams is preoccupied. But the geographical distribution of these seems to indicate that *Maxwellia santarosana* is distinct from the other two, as it has not been taken south of Cedros Island, while the other two were taken in the Gulf of California and at Mazatlán, respectively.

Records of *Muricidea incisa* Broderip (1832, p. 176)[28] from California are in all probability based upon misidentifications of *Maxwellia gemma.* Why these two species should ever have been confused by Carpenter and by so many who have followed him is difficult to say, since the two species have little in common. *Muricidea incisa* probably belongs in *Ocenebra* where Tryon (1880, p. 123) and later Strong[29] have placed it. Its home is in the southern Central American republics. It is certainly not a *Maxwellia* and it is mentioned here merely to clear up the confusion with which it has been surrounded.

In the genus *Typhis,* the varices and the suture resemble those of *Maxwellia* which suggests the thought that the latter genus may represent the transitional link between the Typhinae and the Muricinae. The same conchological features are to be found in the genus *Homalocantha,* for which reason the present writer is inclined to think that the relationships of both *Maxwellia* and *Homalocantha* are with the Typhinae rather than with the Muricinae, but the position of the boundaries which separate subfamilies will always be a matter of personal judgment.

The writer wishes to thank Dr. Harald A. Rehder for examining a reference to which he did not have access, and especially

[29] Min. Conch. Club. Sóu. Calif., no. 51, p. 53, 1945.

Dr. S. Stillman Berry, who had in preparation a manuscript dealing with the same subject, but which he kindly surrendered when he learned of the present writer's interest in this species.

KILLING AND PRESERVATION OF BIVALVE LARVAE IN FLUIDS

By MELBOURNE ROMAINE CARRIKER

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The permanent preservation of bivalve larvae admittedly presents serious difficulties, whether in fluid or in solid media. Because of the impossibility of collecting all stages of pelecypod larvae in an estuary at one time, it is necessary, especially in a comparative taxonomic study, to preserve them and to retain their natural appearance as faithfully as possible. This paper reports some preliminary experiments in the preservation of these larvae from New Jersey estuaries.

In studies directed toward identification of estuarine bivalve larval populations the year around, retention of the larvae in fluids rather than in slide preparations has seemed to facilitate rearrangement and close comparison of the specimens. These experiments have been carried out during the last 2 years principally with the larvae of *Mytilus edulis* Linné collected in Shark River, where they are numerous especially during the late winter and early spring months, and with other pelecypod prodissoconchs during summer months in Little Egg Harbor.

Since in part the valves of these larvae are of a calcareous nature, no acidic preservatives may be used, and since retention of natural coloration is desirable, strongly fading chemicals such as formalin are objectionable. In an effort to eliminate formalin, attempts were made during the summer of 1949 to discover a killing agent, other than formalin, which would cause the larvae to retract, close quickly, and retain natural coloration. Mercuric chloride, sodium hydroxide, and copper sulfate were tried. Larvae killed in a concentration of mercuric chloride of 0.008 g. per 100 cc. of bay water gaped badly, secreted much